

*Observations of the Eclipses of Jupiter's Satellites made at the
Observatory of Toulouse, 1874.*

(Communicated by the Astronomer Royal.)

	1874.	Satel- lite.	Pheno- menon.	Obser- ver.	Instru- ment.	Toulouse M.T.			Mean Time from N.A.			Corr. to N.A.	
						h	m	s	h	m	s	m	s
Jan.	4	I.	Disapp.	T	A	17	0	50.1	16	54	27.7	+0	32.8
	13	I.	"	T	A	13	22	7.6	13	15	49.7	+0	28.3
	13	I.	"	P	B	13	22	3.8	13	15	49.7	+0	24.5
	13	IV.	"	T	A	18	34	23.9	18	32	17.3	-3	43.0
	* 23	III.	Reapp.	T	A	13	55	10.6	13	44	33.0	+4	48.0
	25	II.	Disapp.	P	B	16	44	41.9	16	37	57.8	+0	54.5
	25	II.	"	T	A	16	44	41.0	16	37	57.8	+0	53.6
	29	I.	"	T	A	11	36	40.1	11	30	15.4	+0	35.1
	29	I.	"	P	B	11	36	29.1	11	30	15.4	+0	24.1
	30	IV.	"	P	B	12	33	56.4	12	32	10.0	-4	3.2
	30	IV.	"	T	A	12	33	20.9	12	32	10.0	-4	38.7
	30	III.	"	P	B	14	44	1.6	14	34	38.9	+3	33.1
	30	III.	"	T	A	14	44	21.0	14	34	38.9	+3	52.5
	30	IV.	Reapp.	T	A	15	32	33.8	15	24	46.1	+1	58.1
	30	III.	"	T	A	17	51	24.6	17	41	1.7	+4	33.3
Feb.	5	I.	Disapp.	T	A	13	29	38.3	13	23	25.0	+0	23.7
	5	I.	"	P	B	13	29	43.8	13	23	25.0	+0	29.2
	* 14	I.	"	T	A	9	50	40.5	9	44	57.4	-0	6.5
	* 14	I.	"	P	B	9	50	44.0	9	44	57.4	-0	3.0
	19	II.	"	T	A	13	50	20.0	13	43	28.8	+1	1.6
	19	II.	"	P	B	13	50	18.6	13	43	28.8	+1	0.2
	19	I.	"	T	A	17	15	59.7	17	9	56.7	+0	13.4
	19	I.	"	P	B	17	16	10.7	17	9	56.7	+0	24.4
	21	I.	"	T	A	11	44	31.5	11	38	16.7	+0	25.2
	21	I.	"	P	B	11	44	39.3	11	31	16.7	+0	33.0
	* 26	II.	"	P	B	16	25	7.9	16	19	39.2	-0	20.9
	28	I.	"	T	A	13	37	36.4	15	31	41.6	+0	5.2
	28	I.	"	P	B	13	37	55.7	13	31	41.6	+0	24.5
Mar.*	2	I.	"	P	B	8	5	52.7	8	0	2.9	+0	0.2
	7	III.	"	P	B	10	33	48.3	10	24	23.0	+3	35.7
	7	I.	"	T	A	15	31	6.8	15	25	13.0	+0	4.2
	7	I.	"	P	B	15	31	14.1	15	25	13.0	+0	11.5
	23	I.	Reapp.	T	A	15	58	33.2	15	52	35.0	+0	8.6

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						h	m	s	h	m	s	m	s
Mar.	23	I.	Reapp.	P	B	15	58	5.7	15	52	35.0	-0	18.9
	23	II.	,,	T	A	16	9	25.4	16	3	51.8	-0	16.0
	23	II.	,,	P	B	16	9	35.7	16	3	51.8	-0	5.7
April	1	I.	,,	T	A	12	20	42.2	12	14	54.5	-0	1.9

The observations were made by M. Tisserand, and by M. Perrotin, *Aide-astronome*, whose names are referred to under the initials T and P. The aperture of the telescope employed by M. Tisserand is 11 centimètres, and of that used by M. Perrotin 15 centimètres. The longitude of the Observatory of Toulouse has been assumed to be 5^m 49^s.6 East of Greenwich. The observations marked with an asterisk were made through clouds.

Naked-eye Observation of Jupiter's Satellites.

By W. F. Denning, F.R.M.S., F.M.S.

(Communicated by the Rev. T. W. Webb, M.A., F.R.A.S.)

It may be worth recording that on the night of April 3, at about 10^h I unmistakably saw Sat. III. and IV. of *Jupiter* with the naked eye. On the occasion referred to, these satellites were particularly well placed for such an observation, being near their greatest elongations (West) from their primary. They were seen steadily and separately several times. I also observed them in the finder (power 5) of my 10¼-inch reflector and in an ordinary opera-glass (power 3); and from the remarkable ease with which they were visible, I was not surprised that unaided vision sufficed to reveal them, though previously I had been sceptical on the point, knowing it to be a disputed, albeit a well-attested one.

My first attempts to discern the satellites were unsuccessful, owing to my having taken insufficient care to cut off the planet's marginal rays, but, having accomplished this, they became perceptible. At the time, the moon was only two days past the full, but quite hidden by a bank of cumulus cloud low down in S.E. Additional weight may be attached to this observation, if I add that on several dark nights during the past winter, I distinguished 13 stars in the Pleiades, and have occasionally seen *Jupiter* in full sunshine (see *Monthly Notices*, vol. xxxiii. p. 179).

In concluding this brief paper, I may just refer to the extraordinary variations in the apparent brightness of *Jupiter's* fourth satellite. I have sometimes seen it faint and ill-defined in my 10¼-inch reflector, and in smaller instruments it has been a very dim object indeed. On March 28, 1873, it was *barely visible at all* to Mr. H. C. Key, using 3 inches of aperture and power 140;